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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,621	11/18/2003	Woo Sok Kang	SI-0050	3265
34610 7590 05/14/2008 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200				
EXAMINER PHUONG, DAI				
ART UNIT 2617		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/7 14,621

**Applicant(s)**

KANG ET AL.

**Examiner**

DAI A. PHUONG

**Art Unit**

2617

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 2, 4-16, 19-25 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 4, 5, 7, 8, 13, 20-25 and 27 is/are allowed.
- 6) ☒ Claim(s) 6, 9-12, 14-16, 19, 22 and 28-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's arguments, filed 03/14/2008, with respect to claims have been considered but are moot in view of the new ground(s) of rejection. Claims 3, 17-18 and 26 have been canceled. Claims 1-2, 4-16, 19-25 and 27-30 are currently pending.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 14-15, 19 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Tiedemann, Jr. et al. (U.S. 5509015).

Regarding claim 14, Tiedemann, Jr. et al. disclose a method for controlling a mobile station (MS) of a communication system, comprising:

identifying a plurality of mobile stations based on uses thereof by (fig. 1, col. 3, line 20 to col. 4, line 15. Tiedemann, Jr. et al. disclose that a transmitter 10 is disposed in a base station and transmits messages to receivers 12 and 14, disposed in mobile stations. Receivers 12 and 14 have 32-bit electronic serial numbers (ESN) 16 and 18, respectively. The ESN of each receiver is different from that of all other receivers):

(a) searching subscriber information stored in at least one network circuit (col. 5, lines 8-39. Tiedemann, Jr. et al. base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number), and

(b) determining uses of the mobile stations based on the searched subscriber information, the subscriber information indicating a use of a first mobile station different from a use of a second mobile station (col. 5, lines 8-39. Tiedemann, Jr. et al. base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number); and

determining a slot cycle index value for the first mobile station 12 based on the use of the first mobile station determined in (b) (col. 5, lines 8-39. Tiedemann, Jr. et al. base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number);

determining a slot cycle index value for the second mobile station 14 based on the use of the second mobile station determined in (b) (col. 5, lines 8-39. Tiedemann, Jr. et al. base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number);

transmitting the slot cycle index values to the first and second mobile stations (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose that the base station computes the assigned slot in which it must transmit to the mobile stations); and

setting slot cycle index values in the first and second mobile stations according to the uses (col. 4, line 60 to col. 5, line 39. Tiedemann, Jr. et al. disclose that the Receivers 12 and 14 each substitute slot cycle indices 20 and 22 respectively for SSI in Equation 2. The value of

PGSLOT is also unique to each receiver 12 and 14 because it is derived from ESN 16 and 18, respectively).

Regarding claim 15, Tiedemann, Jr. et al. disclose all limitations in claim 14. Further, Tiedemann, Jr. et al. disclose the method wherein the slot cycle index value is a positive number of 0 to 7 (col. 3, lines 45-62).

Regarding claim 19, Tiedemann, Jr. et al. disclose all limitations in claim 14. Further, Tiedemann, Jr. et al. disclose wherein the slot cycle index values are included in order messages transmitted to the first and second mobile stations (col. 5, lines 8-39).

Regarding claim 28, this claim is rejected for the same reason as set forth in claim 20.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 9-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (U.S. 5509015) in view of Kinnavy (Pub. No: 20030114156).

Regarding claim 6, Tiedemann, Jr. et al. disclose method for increasing use time of a battery of a mobile station (MS) of a communication system, comprising:

identifying a use of the MS based on subscriber information stored in a network circuit, said identifying being performed by the network circuit or another network circuit (col. 5, lines

8-39. Tiedemann, Jr. et al. disclose the base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number. The base station computes the assigned slot in which it must transmit to the mobile station using Equations 1 and 2. When the base station slot timing generates the assigned slot, the transmitter sends a message that indicates the presence of an incoming call to the mobile station;

determining a slot cycle index value for the MS based on said use (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose the base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number.);

transmitting the slot cycle index value to the MS (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose the base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number. The base station computes the assigned slot in which it must transmit to the mobile station using Equations 1 and 2);

setting the slot cycle index value in the MS (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose that when mobile station receiver 12, for example, selects slot cycle index 20, it transmits the value selected to the base station on another channel (not shown). The base station acknowledges the selection by transmitting an acknowledgement message to mobile station receiver 12); and

retrieving slots of a paging channel in the MS according to the set slot cycle index value (col. 5, lines 8-39).

However, Tiedemann, Jr. et al. do not disclose retrieving the slots of the paging channel comprises: comparing the slot cycle index value transmitted based on the identified use with a slot cycle index value previously set in the MS; choosing a smaller value; and retrieving the slots

of the paging channel as the MS transitions from a sleep state to an active state according to the chosen slot cycle index value.

In the same field of endeavor, Kinnavy discloses retrieving the slots of the paging channel comprises: comparing the slot cycle index value transmitted based on the identified use with a slot cycle index value previously set in the MS; choosing a smaller value; and retrieving the slots of the paging channel as the MS transitions from a sleep state to an active state according to the chosen slot cycle index value ([0004]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication device of Tiedemann, Jr. et al. by specifically including retrieving the slots of the paging channel comprises: comparing the slot cycle index value transmitted based on the identified use with a slot cycle index value previously set in the MS; choosing a smaller value; and retrieving the slots of the paging channel as the MS transitions from a sleep state to an active state according to the chosen slot cycle index value, as taught by Kinnavy, the motivation being in order to control how often a mobile station may “wake up” to monitor for transmission from the base station via the paging channel.

Regarding claim 9, this claim is rejected for the same reason as set forth in claim 6.

Regarding claim 10, the combination of Tiedemann, Jr. et al. and Kinnavy disclose all limitations in claim 9. Further, Kinnavy discloses the method wherein said setting the retrieval period comprises: receiving a message containing the slot cycle index value transmitted from the; reporting receipt of the message to a user; and setting the received slot cycle index value

when a message input from the user indicates of change of a retrieval period of the paging channel ([0019]).

Regarding claim 11, the combination of Tiedemann, Jr. et al. and Kinnavy disclose all limitations in claim 10. Further, Tiedemann, Jr. et al. disclose the method wherein the slot cycle index value is stored in a certain field of an order message (col. 5, lines 8-39).

Regarding claim 12, the combination of Tiedemann, Jr. et al. and Kinnavy disclose all limitations in claim 9. Further, Tiedemann, Jr. et al. disclose the method wherein said registering the retrieval period comprises: setting the slot cycle index values corresponding to the received retrieval periods in the MS, and then reporting completion of the setting to the upper system; and storing the slot cycle index value into a slot cycle index field of a retrieval period information table for the MS in the upper system (col. 5, lines 8-39).

Regarding claim 16, Tiedemann, Jr. et al. disclose all limitations in claim. However, Tiedemann, Jr. et al. do not disclose the method wherein said setting includes: setting the first and second mobile stations to different retrieval periods of slots of respective paging channels based on the slot cycle values transmitted to the first and second mobile stations (col. 5, lines 8-39)

In the same field of endeavor, Kinnavy discloses setting the first and second mobile stations to different retrieval periods of slots of respective paging channels based on the slot cycle values transmitted to the first and second mobile stations ([0019]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication device of Tiedemann, Jr. et al. by specifically



including setting the first and second mobile stations to different retrieval periods of slots of respective paging channels based on the slot cycle values transmitted to the first and second mobile stations, as taught by Kinnavy, the motivation being in order to control how often a mobile station may “wake up” to monitor for transmission from the base station via the paging channel.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (U.S. 5509015) in view of DERWENT 2008-A56235.

Regarding claim 22, Tiedemann, Jr. et al. disclose method for increasing use time of a battery of a mobile station (MS) of a communication system, comprising:

identifying a use of the MS based on subscriber information stored in a network circuit, said identifying being performed by the network circuit or another network circuit (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose the base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number. The base station computes the assigned slot in which it must transmit to the mobile station using Equations 1 and 2. When the base station slot timing generates the assigned slot, the transmitter sends a message that indicates the presence of an incoming call to the mobile station;

determining a slot cycle index value for the MS based on said use (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose the base station retrieves the ESN and slot cycle of the mobile station by providing a lookup table with the telephone number.);

transmitting the slot cycle index value to the MS (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose the base station retrieves the ESN and slot cycle of the mobile station by providing a

lookup table with the telephone number. The base station computes the assigned slot in which it must transmit to the mobile station using Equations 1 and 2);

setting the slot cycle index value in the MS (col. 5, lines 8-39. Tiedemann, Jr. et al. disclose that when mobile station receiver 12, for example, selects slot cycle index 20, it transmits the value selected to the base station on another channel (not shown). The base station acknowledges the selection by transmitting an acknowledgement message to mobile station receiver 12); and

retrieving slots of a paging channel in the MS according to the set slot cycle index value (col. 5, lines 8-39).

However, Tiedemann, Jr. et al. do not disclose wherein said use is a position-tracing use the MS, the slot cycle index value corresponding to said position-tracing use having a value larger than a slot cycle index value that corresponds to a use that requires real-time reception of paging messages.

In the same field of endeavor, DERWENT 2008-A56235 discloses wherein said use is a position-tracing use the MS, the slot cycle index value corresponding to said position-tracing use having a value larger than a slot cycle index value that corresponds to a use that requires real-time reception of paging messages (abstract, NOVELTY - A location tracking method in a mobile station having a GPS(Global Positioning System) mode is provided to shortening TTFF(Time-To-First-Fix), to increase the convenience of users, and to improve the reliability of a system through speedy location measurement by using the maximum value among the SCIs(Slot Cycle Indexes) of a mobile communication network and a mobile station for initial

location confirmation and the minimum value among the SCIs for succeeding location confirmation, when determining GPS visit time.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication device of Tiedemann, Jr. et al. by specifically including wherein said use is a position-tracing use the MS, the slot cycle index value corresponding to said position-tracing use having a value larger than a slot cycle index value that corresponds to a use that requires real-time reception of paging messages, as taught by Kinnavy, the motivation being in order to conserve a battery life.

7. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (U.S. 5509015) in view of Kenagy et al. (U.S. 5842124).

Regarding claim 29, Tiedemann, Jr. et al. disclose limitations in claim 14. However, Tiedemann, Jr. et al. do not disclose the method wherein the stored subscriber information includes billing information stored in at least one billing center.

In the same field on endeavor, Kenagy et al. disclose wherein the stored subscriber information includes billing information stored in at least one billing center (col. 4, line 23 to col. 5, line 14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication device of Tiedemann, Jr. et al. by specifically including wherein the stored subscriber information includes billing information stored in at least one billing center, as taught by Kenagy et al., the motivation being in order to verify its authenticity.

8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann, Jr. et al. (U.S. 5509015) in view of Illidge (U.S. 6542752).

Regarding claim 30, Tiedemann, Jr. et al. disclose limitations in claim 14. However, Tiedemann, Jr. et al. do not disclose the method wherein the stored subscriber information includes registration information stored in at least one home location register r.

In the same field on endeavor, Illidge discloses wherein the stored subscriber information includes registration information stored in at least one home location register (col. 3, line 56 to col. 4, line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the communication device of Tiedemann, Jr. et al. by specifically including wherein the stored subscriber information includes registration information stored in at least one home location register, as taught by Illidge, the motivation being in order to identify the mobile station in the system.

#### *Reasons for Allowance*

9. The following is an examiner's statement of reasons for allowed:

Claims 1-2, 4-5, 20-25, 7-8 and 27 are allowed.

Claims 2, 4-5, 20-25 and 27 are dependent on claim 1.

Claim 8 is dependent on claim 7.

Regarding claim 7, the prior art record does not disclose nor fairly suggest a method for increasing use time of a battery of a mobile station (MS) of a communication system, comprising: identifying a use of the MS based on subscriber information stored in a network circuit, said identifying being performed by the network circuit or another network circuit;

determining a slot cycle index value for the MS based on said use; transmitting the slot cycle index value to the MS; setting the slot cycle index value in the MS; and retrieving slots of a paging channel in the MS according to the set slot cycle index value, wherein said retrieving includes:

*computing a retrieval period for a paging channel as follows:*

*Retrieval Period =  $N * 2^{SCI} * T$  where  $N$  is a first constant value,  $SCI$  corresponds to the set slot cycle index value, and  $T$  is a second constant value equal to a predetermined slot period.*

Regarding claim 7, the prior art record does not disclose nor fairly suggest a method for increasing use time of a battery of a mobile station (MS) of a communication system, comprising:

*setting a retrieval period of slots of a paging channel according to a use of the MS; wherein said use is one indicated by subscriber information registered in a network circuit and wherein the retrieval period is set based on the following equation:*

$$\text{Retrieval Period} = N * 2^{sci} * T$$

*where  $N$  is a first constant value,  $SCI$  corresponds to the set slot cycle index value, and  $T$  is a second constant value equal to a predetermined slot period; registering the retrieval period in an upper system; and retrieving the slots of the paging channel as the MS transitions from a sleep state to an active state in the registered retrieval period.*

### Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAI A. PHUONG whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen Duc can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Dai A Phuong/  
Examiner, Art Unit 2617  
Date: 05/11/2008

/Duc Nguyen/  
Supervisory Patent Examiner, Art Unit 2617